

Appl. No. 10/724,084
Amendment dated: October 29, 2008
Reply to OA of: July 29, 2008

REMARKS

At the outset, Applicants thank Examiner Simone for his time and consideration of the application during the interview with the undersigned. During the interview, the issues raised in the outstanding Official Action were discussed. Applicants traversed the new matter rejection by pointing out that the passages of the specification that support claims 10-15, 34 and 35. In addition, Applicants argued that the anticipation and obviousness rejections should be withdrawn as none of the publications disclose or suggest a fry cooking device with the $HB/SB^{1/2}$ relationship, $HA/SA^{1/2}$ relationship, or frying zone as recited in the claimed invention. The Examiner indicated that he would take our arguments under consideration but also suggested that a declaration attesting to how the claimed frying device is an improvement over the prior art might help advance prosecution.

The present application has been amended in a manner that is believed to place it in condition for allowance. Claims 10-15, 34-35, and 53-61 are pending in the application. Claims 10-15, and 34-35 remain unchanged.

Claims 53-61 have been added. Support for claims 53-61 may be found generally throughout the specification and original claims. Independent claims 53 and 61 are both directed to a fry cooking device having the with the $HB/SB^{1/2}$ and $HA/SA^{1/2}$ ratios as recited in claim 10. The frying vessel containing oil satisfies the following relationship in terms of the area SB of the opening and the depth HB of the vessel: $HB /$

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$SB^{1/2} = 1.1$ to 3.0 . Support for this recitation may be found at page 51, lines 1-10. In addition, the present specification at page 46, lines 16-21 states that "A suitable fry cooking device used in carrying out the method of preparing a fry cooked product of the present invention, includes a device meeting the relationship of $HB/SB^{1/2} \dots 1.1$ to 3.0 ." This means the device can form the recited oil layer as a matter of course.

The layer of the frying oil contained in the frying vessel satisfies the relationship in terms of the area SA of the oil surface and the depth HA of the oil layer from its bottom to the surface: $HA / SA^{1/2} = 0.6$ to 3.5 . Support for this recitation may be found in the present specification at page 15, line 5 to page 16, line 7.

The frying zone recited in claim 53 is defined in detail at page 18, lines 1 to 8. Applicants additionally note that support for dependent claim 59 may be found at page 19, lines 1-10 in the specification.

New claims 53-61 are plainly directed to the elected invention in that they are directed to a frying device and recite the same $HB/SB^{1/2}$ relationship and $HA / SA^{1/2}$ relationship. In this regard, claims 53-61 should be entered and fully considered at this time.

Claims 1-9, 16-33, and 36-52 are canceled without prejudice and may be the subject of a continuation or divisional application.

In view of the above, it is believed that no new matter has been added to the disclosure.

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In the outstanding Official Action, claims 10-15 and 34 -35 stand rejected under 35 U.S.C. 112, first paragraph for allegedly introducing new matter into the disclosure. This rejection is traversed.

The Examiner's attention is respectfully directed to the present specification at page 15, line 5 to page 16, line 7. This passage of the specification plainly supports the recitation to $HA/SA^{1/2}$ relationship. The frying zone is defined in the present specification at page 18, lines 1 to 8, wherein the specification states that "it is possible for the frying zone of the frying oil layer (the region within the frying oil layer in which the ingredients are actually subjected to the fry cooking) to cover at least 50%, preferably at least 60%, more preferably at least 70%, and most preferably at least 80% of the distance between the surface and the bottom of the frying oil layer". Ingredients are discussed in terms of being fried in such a layer at page 6, lines 12-20, page 10, lines 16-22, and page 15, lines 5-16.

The Examiner's attention is also respectfully directed to Table 1 at page 56 in the present specification, wherein various oil vessels in accordance with the claimed invention are provided.

In view of the above, it is believed to be apparent that claims 10-15 and 34-35 are fully supported by the present disclosure.

Claims 10-15, and 34-35 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by JP 2000-271018. This rejection is traversed.

The JP 2000-27108 discloses an electrostatic field fryer (see abstract).

As the Examiner is aware, a claim is anticipated only if each and every element

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as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed Cir. 1989).

However, the Official Action fails to provide any evidence that the JP 2000-27108 discloses a frying device with a frying oil vessel having a relationship of HB/SB^{1/2} or HA/SA^{1/2} as claimed.

In addition, there is no recognition of a frying device having a frying zone as recited in independent claims 10 and 53. The JP 2000-271018 publication discloses a frying oil vessel 15 having a cubic shape. However, the frying zone of the frying oil vessel 15 is only a portion above a protective member (cover mesh) 6. Thus, the frying zone does not cover at least 80% of the distance between the surface and the bottom of the frying oil layer as required by claims 10 or 53.

As noted above, the HA/SA^{1/2} relationship and frying zone are plainly supported by the present disclosure. These recitations do relate to the structure of the claimed invention and must be considered.

In that the JP 2000-271018 does not disclose the HA/SA^{1/2} relationship, HB/SB^{1/2} relationship, or the frying zone as claimed, the JP 2000-271018 fails to anticipate the claimed invention.

The rejection of claims 10-15, 34 and 35 under 35 U.S.C. 103(a) as obvious over either one of Oiwa, Moore, et al., Koopman, or Cahlander, et al. has been carefully

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considered but is most respectfully traversed in view of the amendments to the claims and the following comments.

The claimed invention is directed to a fry cooking device, comprising a frying oil vessel having a substantially parallelepiped shape with four sidewalls and a single bottom wall and satisfying a relationship of $HB/SB^{1/2} = 1.1$ to 3.0 , wherein SB denotes an area of an open portion of the vessel, and HB denotes the depth of the vessel. The frying vessel also forms a frying oil layer meeting a relationship of $HA/SA^{1/2} = 0.63$ to 3.5 , wherein SA denotes a surface area of the frying oil layer, and HA denotes the height from the bottom to the surface of the frying oil layer (See independent claims 10, 53, and 61). The fry cooking device may also provides a frying zone that covers at least 80% of the distance between the surface and the bottom of the frying oil layer (See independent claims 10 and 53).

The inventors of the claimed invention have discovered that the claimed frying device provides a superior fried food product and maintains the quality of frying oil for a longer period of time than conventional frying devices.

Applicants most respectfully submit that none of the publications, alone or in combination disclose or suggest the claimed invention.

Oiwa (U.S. Patent No. 5,184,539) discloses a fryer 1 equipped with an oil tank 2 including a circular bottom inner tank 3 and a bottom outer tank 5. The oil tank 2 has a rectangular parallelepiped shape. The circular bottom inner tank 3 forms a central bottom portion of the tank 2, and the outer tank 5 surrounds an outer circumference of

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the inner tank 3 and has a rectangular parallelepiped shape (see column 2, lines 26-41).

A deflector 30 is horizontally arranged at a predetermined interval to the inner wall of the oil tank 2 at a predetermined position in the oil tank 2. A hole 31 is provided for accelerating convection of the frying oil P (see column 3, lines 12-18). The frying oil P heated in the inner tank 3 is fed upwardly via the through hole 31 of the deflector 30 to the vicinity of the oil surface level to flow toward the sidewall of the oil tank 2.

A material of food with a coating is thrown in the oil in the upper portion in the oil tank, and fried (see column 3, lines 46-51). The frying zone of Oiwa is particularly wide in the lateral direction as compared to the vertical direction (see Fig. 1). In Oiwa, materials of food are fried in the oil in the upper portion in the oil tank as mentioned above, and therefore the elongation of the frying zone in the vertical direction is not considered. In other words, even if the frying zone is elongated in the vertical direction, that portion of the oil layer which can be actually utilized for frying is only the region near the surface, and therefore the other/remaining portion of the oil layer is really unnecessary and wasted.

Moore, et al. (U.S. Patent No. 4,287,818) disclose a cooking system having a fry pot unit 14. The fry pot unit 14 is described at column 5, lines 11-16. Moore states, "Referring to FIGS. 1 and 4, the fry pot 14 is a deep flat frying unit provided for cooking food portions such as breaded chicken which comprises an open mouth 40 having side walls 42 joined by end walls 44 and a bottom 46 which in combination define a vat or

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basin for receiving liquid shortening or cooking oil." The fry pot 14 is shown in FIG. 4 as having a shape longer in the lateral direction than in the vertical direction.

Koopman (U.S. Patent No. 4,854,227) discloses a fry basket. FIG. 1 shows fry basket 10 placed in cooking vat 16. The cooking vat 16 shown in FIG. 1 has a shape longer in the lateral direction than in the vertical direction.

Cahlander et al. (U.S. Patent No. 4,922,435) disclose a fully automated robotized system and method for cooking food products. The system and method may be used by quick service or fast food restaurants and is capable of cooking, on a fully automated basis, french fries, chicken nuggets, fish filets and chicken patties. The system includes a robot, a bulk uncooked food dispensing station, a cooking station and a cooked food storage station. The system can be controlled by a computer operating and control station that controls and directs the robot to obtain bulk food from the dispensing station, place it in cooking position at the cooking station and when cooked, remove the food and deliver it to the storage station, at a rate required to fill anticipated customer orders. A frying vessel is shown in FIGS. 31 and 35, where the vessel is shown as having a shape longer in the lateral direction than in the vertical direction.

Cahlander et al. does not disclose a fry cooking device, comprising one or more frying oil vessels, the frying vessel having open hollow substantially parallelepiped shape with vertically extending four sidewalls and a single bottom wall and satisfying a relationship of $HB/SB^{1/2} = 1.1$ to 3.0 , where SB denotes an area of an open portion of the vessel, and HB denotes the depth of the vessel, as required by amended claim 10

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of the present application, either. Accordingly, it is most respectfully requested that this rejection be withdrawn.

None of the above-identified publications, alone or in combination, disclose or suggest a frying device with a frying oil vessel having a relationship of $HB/SB^{1/2}$ and $HA/SA^{1/2}$ as claimed. In fact, none of the publications discuss such a relationship.

In addition, there is no recognition of a frying device having a frying zone as recited in independent claims 10 and 53.

Thus, in view of the above, applicants respectfully submit that none of the publications render obvious the claimed invention.

In imposing the rejection, the Official Action alleges that it would have been an obvious matter of design choice to have a frying vessel with a shape longer in the vertical direction than in the lateral direction. In addition, the Official Action alleges that it would have been obvious to optimize the claimed HB/SB relationship. Applicants respectfully disagree.

It can not be considered that the any of the publications consider these recitations as capable of being optimized in a manner that would result in the claimed invention. A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to

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be a result- effective variable.). See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy). As noted above, none of the above-identified publications disclose or suggest a frying device with a frying oil vessel having a relationship of $HB/SB^{1/2}$ and $HA/SA^{1/2}$ or a frying device having a frying zone as recited in independent claims 10 and 53. In view of the above, applicants most respectfully submit that the Official Action fails to satisfy its burden in showing that one skilled in the art would optimize the teachings of the above-identified publications in manner that would result in the claimed invention.

Applicants further submit that the specification recites numerous examples that provide evidence as to the improved/unexpected results that are exhibited by the claimed invention. The Examiner is respectfully reminded that the Patent Office must consider objective indicia of nonobviousness whenever present. Specifically, the Patent Office is bound to consider evidence of unexpected results, commercial success, long-felt but unresolved needs, failure of others, skepticism of experts. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F. 2d 1530, 1538 (Fed Cir. 1983). Federal Circuit precedent mandates consideration of comparative data in the specification which is intended to illustrate the claimed invention in reaching a conclusion with regard to the obviousness of the claims. *In re Margolis*, 785 F. 2d 1029 (Fed Cir. 1986). (Vacating Board decision which refused to consider data in the specification which compared an embodiment of the invention with the prior art product and noting that such evidence spoke to unexpected results and non-obviousness).

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In particular, Example 1 at page 78, line 24 to page 61, line 2 compares a cooking device in accordance with the claimed invention to a conventional fry cooking device. The results are reported in FIGS. 13 to 16. FIGS. 13 to 16 show that the fry cooking device of the present invention can significantly suppress the deterioration of frying oil as compared to the case where a conventional fry cooker is used.

Example 2 at page 81, line 3 to page 86, line 14 provides further evidence with reference to FIGS. 17 to 20 that the claimed fry cooking device significantly suppresses the deterioration of frying oil relative to a conventional fryer. This example indicates with reference to TABLES 2 to 7 that fried materials have better appearances and the peeling-off area of the bread powder coating was significantly small. Excellent results were also obtained in the organoleptic evaluation, wherein it was found that the amount of oil absorbed by a bread powder coating was significantly small, the amount of oil in a coating was significantly small, the amount of oil consumed during cooking was significantly small, and the amount of the frying refuse was small relative to conventional devices.

Further evidence of the improved results is set forth in Examples 3 to 17. In particular, the Examiner's attention is respectfully directed to Figures 17-26 that show frying an ingredient with the claimed device provides improved acid value, chromaticity, amounts of polymerized material, and kinetic viscosity relative to using a conventional frying device.

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Indeed, in the prior art frying method and fry cooking device ($HB/SB^{1/2} < 0.8$ specifically shown in FIG. 5), when the frying oil amount is reduced and the frying oil vessel is made small, the amount of ingredients which can be fried at one time is largely reduced, presenting problems in practice (for example, please compare the maximum numbers of products of the fry cooking device of invention 5 and conventional cooking device 3, where the number is 8 in the former case, while the number is 4 in the latter case). This is because only cooking devices which have a shape longer in the lateral direction than in the vertical direction exist in the prior art. The relationship of $HB/SB^{1/2} = 1.1$ to 3.0 means that the frying oil vessel of the present invention is longer in the vertical direction than in the lateral direction. The frying vessel having such a shape can not be inferred from the prior art technical or understanding of those skilled in the art at the time the application was filed.

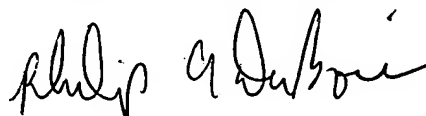
The Examiner's attention is also respectfully directed to Table I in the specification. Table I shows the width, length, height (HB), vol., oil surface area (SA), open portion area (SB), maximum height of oil (HA), $HB/SB^{1/2}$ relationship, $HA/SA^{1/2}$ relationship and loading rates for eight frying cooking devices in accordance with the claimed invention. Table 1 also shows these values for eight conventional frying cooking devices. None of the conventional devices exhibit the $HB/SB^{1/2}$ relationship, $HA/SA^{1/2}$ relationship, or loading rates as claimed (See claims 10, 53, 59, and 61).

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In light of the improved results exhibited by the claimed invention and the fact that none of the publications disclose or suggest the relationships or frying zone as claimed, applicants respectfully request that the obviousness rejection be withdrawn.

In view of the above comments and further amendments to the claims, favorable reconsideration and allowance of all the claims now present in the application are most respectfully requested.

Respectfully submitted,
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